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EXAMINER

LI, SHI K

ART UNIT PAPER NUMBER

2633

DATE MAILED: 02/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/332,264

Applicant(s)

WOOD, THOMAS HUNTINGTON

Examiner

Shi K. Li

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5 and 7-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 4-5 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Darcie et al. (U.S. Patent 6,493,335 B1).

Darcie et al. discloses method and system for providing high-speed data services, especially for users with Ethernet equipment (see col. 2, lines 54-col. 3, line 12). Darcie et al. discloses in FIG. 14A an application of the method to optical nodes. FIG. 14A includes a central office (equivalent to head-end) 10, a distribution fiber, a splitter 15 and a plurality of drop fibers connecting to the end users (EU, equivalent to network unit). Darcie et al. suggests in col. 4, line 38-40 that the central office/head-end (CO/HE) includes Ethernet adapter circuit. The EUs receive upstream data as indicated in FIG. 14A. Darcie et al. shows in FIG. 11 an example of the arrangement of an end user with an Ethernet card 160. That is, Darcie et al. teaches and suggests the use of an Ethernet card as an interface for coupling the upstream data. Darcie et al. also teaches in col. 12, lines 11-14 the use of QPSK or OOK to convert the Ethernet data into a format suitable for transmit in a cable or fiber. Darcie et al. teaches in col. 6, line 61-col. 8, line 60 methods for reducing the chance of or avoiding collision.

Regarding claim 2, QPSK or OOK inherently uses a carrier.

Regarding claim 4, the EUs showed in FIG. 14A have optical fiber interfaces and therefore are optical network units.

Regarding claim 5, the CO/HE delivers the data to the Ethernet switched bridger and therefore the data streams are in packet format.

Regarding claim 13, the central office transmits a downstream data to the network units as indicated by the arrows pointing from the CO to the direction of the EUs in FIG. 14A.

***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 7, 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Darcie et al. (U.S. Patent 6,493,335 B1) in view of Bodeep et al. (U.S. Patent 5,528,582).

Darcie et al. has been discussed above in regard to claims 1-2, 4-5 and 13. Regarding claim 7, the difference between Darcie et al. and the claimed invention is that Darcie et al. does not include the details of the network unit. Instead, Darcie et al. refers to Bodeep et al. for the details (see col. 4, line 22). Bodeep et al. discloses in FIG. 2 the structure of a mini-fiber node 260, which includes an adapter circuit 261 for receiving the upstream data, a modulator 262 and a transmitter 265. Since Darcie et al. refers to Bodeep et al. for the details, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the mini-fiber node, as taught by Bodeep et al., in the access network of Darcie et al.

Regarding claim 9, Darcie et al. suggests the use of QPSK as discussed above in regard to claims 1-2, 4-5 and 13.

Regarding claim 12, since Darcie et al. suggests the inclusion of an Ethernet interface in the network unit as discussed above in regard to claims 1-2, 4-5 and 13, the adapter circuit of the modified system of Darcie et al. and Bodeep et al. provides an Ethernet interface for coupling to a data communication device.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Darcie et al. and Bodeep et al. as applied to claim 7 above, and further in view of Feldman (U.S. Patent 6,137,607).

Darcie et al. and Bodeep et al. have been discussed above in regard to claim 7. The difference between the modified communication system of Darcie et al. and Bodeep et al. and the claimed invention is that the network units of the modified communication system do not include a bias control circuit. Feldman et al. teaches the use of bias control for reducing optical beat interference as illustrated in FIG. 2. Feldman et al. describes the operation of the bias control 204 in col. 2, lines 60-67 such that the bias control circuit shuts off the laser (transmitter) in the absence of user data. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the bias control circuit, as taught by Feldman et al., into the modified system of Darcie et al. and Bodeep et al. to reduce optical beat interference.

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Darcie et al. and Bodeep et al. as applied to claim 7 above, and further in view of Watanabe (U.S. Patent 5,896,211).

Darcie et al. and Bodeep et al. have been discussed above in regard to claim 7. The difference between the modified communication system of Darcie et al. and Bodeep et al. and the claimed invention is the modulation method for upstream data. Watanabe teaches the use of

FSK as a modulation method for SCM in FIG. 5 and col. 5, lines 52-67. In fact, Watanabe lists a number of modulation methods and choosing any one of them would be a design choice depending on the particular application. Where the claimed differences involve the substitution of interchangeable or replaceable equivalents and the reason for the selection of one equivalent for another was not to solve an existent problem, such substitution has been judicially determined to have been obvious. See *In re Ruff*, 118, USPQ 343 (CCPA 1958). Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use FSK as a modulation method, as taught by Watanabe, in the modified system of Darcie et al. and Bodeep et al. as a design choice based on the particular application.

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Darcie et al. and Bodeep et al. as applied to claim 7 above, and further in view of Zirngibl (U.S. Patent 5,550,666).

Darcie et al. and Bodeep et al. have been discussed above in regard to claim 7. The difference between the modified communication system of Darcie et al. and Bodeep et al. and the claimed invention is the wavelength for the upstream data. Darcie et al. indicates in FIG. 14A the use of difference wavelengths for upstream data and downstream data. Zirngibl teaches in col. 2, line 39-41 the use of 1.3  $\mu\text{m}$  wavelength for upstream data. Certain optical fiber has a minimal absorption loss around 1.3  $\mu\text{m}$ . Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use 1.3  $\mu\text{m}$  wavelength for upstream data, as taught by Zirngibl, in the modified system of Darcie et al. and Bodeep et al. because certain optical fiber has a minimal absorption loss at wavelength around 1.3  $\mu\text{m}$ .

8. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Darcie et al. (U.S. Patent 6,493,335 B1) in view of Zirngibl (U.S. Patent 5,550,666).

Darcie et al. has been discussed above in regard to claims 1-2, 4-5 and 13. Darcie et al. includes in FIG. 14A transmitter XTR, receiver RCV and wavelength-division multiplexing device. The difference between Darcie et al. and the claimed inventions is that Darcie et al. does not disclose the details of the head-end for the optical application. Zirngibl teaches the necessary components for transmitting and receiving optical signals. Zirngibl discloses in FIG. 1 the structure of a central office which includes a transmitter 140, receiver 150 and wavelength-division multiplexing device 170. As indicated by either Darcie et al. or Zirngibl, the upstream data and the downstream data use different wavelengths, therefore, the receiver in the head-end and the transmitters in the network units operate in one wavelength while the transmitter in the head-end and the receivers in the network units operate in another wavelength. A receiver in the head-end is needed to receive upstream data and a transmitter in the head-end is needed to transmit data to the network unit. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a transmitter and a receiver in the head-end, as taught by Zirngibl, in the system of Darcie et al. because a receiver in the head-end is needed to receive upstream data and a transmitter in the head-end is needed to transmit data to the network unit.

#### ***Response to Arguments***

9. Applicant's arguments with respect to claims 1-2, 4-5 and 7-15 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 703 305-4341. The examiner can normally be reached on Monday-Friday (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 703 305-4729. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9314 for regular communications and 703 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-3900.

skl  
February 4, 2003

  
JASON CHAN  
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